



**STATE OF DELAWARE**  
**DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL**  
**DIVISION OF FISH & WILDLIFE**  
**NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM**  
4876 Hay Point Landing Road Smyrna, Delaware 19977  
Phone: 302-735-8651  
Fax: 302-653-3431

Thank you for considering being a volunteer for the **Delaware Bat Count: DE Bat Spotters 2011**. We are asking volunteers to find or adopt a bat colony and count the bats as they leave their roosts to feed in the evenings. The colony could be in a barn, attic, tree or bat box... anywhere you find a group of bats hanging out together. If you don't know of any roosts sites, contact us to adopt on in your area. Bats are extremely beneficial to our environment and keeping track of them is a fun and rewarding activity for all ages. It's an interesting and unique way to connect with nature and do something helpful for wildlife. Anyone can volunteer!

#### **Why monitor the bats in Delaware?**

Bats are a major predator of night-flying insects, providing us with a valuable and free service. In addition to mosquitoes, bats eat many of the pests that affect our crops including cucumber beetles, ground beetles, and leaf hoppers. It is to our benefit to have them around.

And bats are in trouble ... BIG trouble! A new disease has emerged that is killing huge numbers of bats. As of June 2010, White Nose Syndrome (WNS) has caused major mortality at winter hibernation sites in 14 US states and in 2 Canadian provinces. WNS is characterized by a white, cold-loving fungus; it causes a sub-dermal infection, unusual behaviors, and eventually death to the bats. *In April 2010, the fungus associated White-nose Syndrome was confirmed on bats in Delaware.* Delaware doesn't have caves or mines for hibernating bats so we do not see the direct die-offs other states have witnessed. However, we expect to see changes to our bat populations because many of our bats migrate from hibernation sites in WNS-affected states. We don't yet completely understand how the disease affects summer bat colonies. The Delaware Division of Fish and Wildlife is working closely with other state biologists to monitor the effects of this horrible disease, and we can really use your help.

#### **What can you do to help?**

- Find or adopt a bat roost in your area (adoptions available).
- Count the bats as they emerge from their roost in the evening.
- Fill out the forms provided by DE Fish and Wildlife, extras at [www.fw.delaware.gov/bats](http://www.fw.delaware.gov/bats).
- Send the completed forms to us in August.

#### **When can I start?**

Tonight! We ask that each volunteer conduct at *least* one count between late May and the end of August, but most volunteers adopt a site and survey once per month in the summer (May-Aug) to monitor "their" bats. If only doing one survey, the best time to survey is mid-July when young are flying and the colony has not begun to disperse. Counts can range from 1 bat to several hundred at one site.

#### **Come and join the bat spotters!**

It can be an exciting, educational and fun wildlife viewing activity. Many people turn this survey into a social event with a dinner or dessert stop afterward. This is an exciting opportunity to get involved and become a citizen scientist in important research. Once you start, you may enjoy it and want to learn more. You can start by going to:

<http://www.fw.delaware.gov/bats/>

We look forward to hearing from you.

# DE Bat Spotters 2011

## Volunteer Project Instructions

### INTRODUCTION

Your survey results will be used to

- Identify and evaluate the approximate size of bat maternity roosts by counting bats as they emerge from roost site.
- Evaluate differences between bat pup pre-flight and post-flight counts, using more extensive count surveys at some locations.

The Goals of the survey are to

- Gather base line information on summer colonies
- Evaluate the impact of WNS on summer colonies over time
- Assist in the identification of the primary WNS contagion
- Determine if WNS contagions persist and can be transmitted in summer roosts; and correlate long term trends with the spread of WNS.

### COMMITMENT

Locating and conducting a base line emergence count is one of the most important aspects of this study. It is hoped that surveyors will adopt your site over the next several years or longer. However, you can do as little as one count per year or as many as 24. The minimal commitment is that a volunteer or researcher who locates at least one roost conducts a minimum of one emergence count of that site per year. You may be contacted by researchers to use your site in a more extensive study. Once you have participated with an initial commitment and learn how much fun counting bats is, you may want to increase your effort. Listed below are different levels that can be used in this study.

**LEVEL 1-** Find and conduct at least one emergence count of a roost between May 15 – August 1. Additional roosts can also be located and counts conducted there as well. Base line information on many roosts is extremely valuable. If conducting one count try to conduct in mid-July (late lactation for females) when the colony should be most stable.

**LEVEL 2-** Conduct an emergence count at a roost before pups begin flying (pre-volant) and after they can fly (post-volant).

**Pre-Volant** (before pups can fly): May 15 – June 21.

**Post-Volant** (after pups can fly): July 4 – August 1. At least one (pref. 2) or more emergence counts after most pups begin flying. Target: mid-July.

**LEVEL 3-** Conduct an emergence count at least once per month (or more!) between May 15 – Aug 1.

*NOTE: To increase accuracy, a survey should be conducted at the same site on a second consecutive night. Extra counts can be conducted into August, but some bat colonies begin breaking up for the year by August 1.*

**Volunteers:** Another aspect of this study involves researchers with the appropriate state and federal permits. You may be contacted for permission to use your site in these studies. Proposed work includes netting during the pre-flight period to capture females and evaluate reproductive condition, gathering weight data, banding, and collecting samples for lab studies such as skin and blood samples.

## PROTOCOL (How to do the survey)

**Finding colonies of bats:** Tin-roofed barns, church steeples, and other old structures provide the best opportunities for finding bat roosts. The largest colonies are usually located along major rivers or other large bodies of water and other colonies can be found most everywhere near forests and water. Buildings such as old houses, churches, and barns are likely candidates. Usually you can just ask local people about buildings with bats, bat roosts are locally known. If you're lucky, someone will know of artificial roosts created just for bats. The bat species will usually be little brown (*Myotis lucifugus*) and big brown (*Eptesicus fuscus*) bats where females congregate in spring through summer to give birth and rear their young. These species are both heavily impacted by White Nose Syndrome and are of great interest for our study.

**Data Forms:** The information you collect will be maintained in a database used to research WNS. A database provides uniform formatting and storage of your data so it can be compared with other surveys. This requires the use of standardized reporting forms. Please use them!

1. **Volunteer Information Form:** This is used to register you within the program. Please print legibly so that your contact information is entered correctly. You only need to complete this form once, unless changes are needed.
2. **Site and Landowner Data Form:** It's important to make contact with the landowners and get their approval. Location information is important. Please record the state and county. If you have a GPS unit, please record the latitude, longitude and datum the unit is set on. If you do not know the datum, write unknown. Record the species using the roost if known, otherwise circle unknown. The last portion of the form collects the landowner's contact information. You only need to complete this form once unless the landowner or other information changes.
3. **Roost Monitoring Data Sheet\*:** Use this form for recording the actual bat count. Be sure to indicate the site name and you as the surveyor. Record the date, sky and wind codes (codes are on bottom), start temperature, start & end time, total bats counted and technique used, which will usually be "visual". Please make a note of other surveyors in comments. Also note any unusual observations. The form page has space for 2 counts. If you conduct more than 2, copy the form or print more from the volunteer page at [www.fw.delaware.gov/bats](http://www.fw.delaware.gov/bats).
4. **Volunteer Timesheet\*:** Researching a wildlife disease is an expensive adventure. Funding the work requires grants and most grants (including the one funding the regional initiative on WNS) require grant funds be matched with a percentage of the grant. In other words, nothing is free. By completing the volunteer timesheet and information form, your time spent on this survey can be applied to the required match. Please complete, **SIGN** and return the volunteer timesheet so that you can help us retain and use this grant money. Anyone who assists you can also fill out a timesheet

**\*Incomplete Data Sheets cannot be used.**

**\*\*No grant match can be generated without accurately completed Volunteer timesheets.**

**The Survey:** It's best to do some scouting before hand to determine where bats are exiting. You may find that you need help in covering all the exits (front and back of a structure).

- Arrive ½ hour before sunset, survey when starting temperatures are above 60°F, with wind and sky codes of 3 or less.
- Bring a thermometer, pencil, and the emergence data sheet.
- Locate where the bats are exiting the structure and count them as they exit. Some may re-enter, especially when there are pups inside. Try to keep track of this.
- Position both yourself and helpers for easy viewing of bats exiting. Silhouetted bats against the sky for easier viewing.
- When more than one surveyor is needed, turn the count into an evening social, with dinner or an ice cream parlor visit afterwards.
- Please remember to ask permission of the landowner and enjoy bat spotting.
- If you are unable to complete all your counts, please contact Erin Adams ([erin.adams@state.de.us](mailto:erin.adams@state.de.us)) to arrange a substitute.

**Roosting Estimate-** If time does not permit an emergence count AND the roosting bats can be counted (example: Bat Box), a roost estimate may be recorded in comments. This is most useful for surveying multiple bat boxes where a light can be shined up into the bat box and roosting bats counted. Record the total bats for the count, record "other" in technique and note roost estimate and counting method in comments. This type of count is generally a minimal estimate since many bats may not be seen, but it does record a roost.

**Photos from sites:**



Big Brown Bat roosting in a bat box



Bat Boxes on building



Note staining from bats around exit point

**Return Completed Survey Data and Timesheets by August 31, 2011:**

**Delaware Bat Spotters - Erin Adams  
Natural Heritage and Endangered Species Program  
4876 Hay Point Landing Rd  
Smyrna, DE 19977**

Please include:

1. Volunteer Service Agreement
2. Volunteer Timesheet (drive time to site not included)
3. Landowner/Site Information
4. Roost Monitoring Data (one block per night observed)

Call or email Erin Adams with any questions or concerns at (302)-735-8669 or [Erin.Adams@state.de.us](mailto:Erin.Adams@state.de.us)

DE Bat Spotters 2011

Landowner and Roost Site Information

Site name: \_\_\_\_\_ State DE County: New Castle Kent Sussex

LAT: \_\_\_\_\_° - \_\_\_\_\_' - \_\_\_\_\_" (N)

LON: \_\_\_\_\_° - \_\_\_\_\_' - \_\_\_\_\_" (W)

DATUM (circle): WGS84 (preferred) – NAD83 – NAD27

Lat/Lon Precision (circle): GPS – From Map – County. Resolution – Not Mapped – Other (specify) \_\_\_\_\_

**LANDOWNER INFORMATION (CONFIDENTIAL):**

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_ EMAIL: \_\_\_\_\_

SURVEYOR(S) NAME: \_\_\_\_\_

**Roost Structure is:** Barn – church – occupied house – unoccupied house – utility building – bat box – bat condo – bridge – tree –

Unknown – other structure (describe): \_\_\_\_\_

**Roost Structure fate/plans are:** Bat Exclusion Planned Possible Bat Exclusion No Exclusion Planned Other \_\_\_\_\_

Primary Species within Roost: \_\_\_\_\_ or Unknown (circle if unknown)

(list only 1 if known., and make comments on others)

**COMMENTS** (include directions to site, all places where bats are exiting, how many surveyors needed at site, other species roosting, landowner's plans for the bat colony, history of site regarding bats, etc. Attach more sheets if needed):

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# DE Bat Spotters 2011

## Roost Monitoring Data Sheet

**SITE NAME** \_\_\_\_\_ **SURVEYOR:** \_\_\_\_\_

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other  
COMMENTS:

**SITE NAME** \_\_\_\_\_ **SURVEYOR:** \_\_\_\_\_

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other  
COMMENTS:

SKY		WIND		
<b>CODE</b>	DESCRIPTION	<b>CODE</b>	DESCRIPTION	~Speed
1	Clear-Clear to a few clouds	1	Calm-Leaves Still	0 MPH
2	Partly Cloudy-Clouds but variable sky conditions	2	Slight Breeze-Leaves slightly Rustling	1-7 MPH
3	Cloudy-Mostly cloudy or overcast	3	Gentle Breeze-Leaves and twigs in motion	8-12 MPH
4	Drizzle-Light intermittent rain	4	Mod. Breeze-Small branches begin to move	13-18 MPH
5	Showers-Steady soaking rain	5	Windy-Small Trees or more in canopy sway	19-24+ MPH
6	Thunderstorms-Rain with thunderstorms	6	Not Recorded-	Not Recorded
7	Not Recorded-Not Recorded			

*Sky and wind codes of 1 – 3 are best. Code of 4 is marginal. Avoid surveying if code is higher than 4.*

# DE Bat Spotters 2011

## Roost Monitoring Data Sheet

**SITE NAME** \_\_\_\_\_ **SURVEYOR:** \_\_\_\_\_

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other  
COMMENTS:

**SITE NAME** \_\_\_\_\_ **SURVEYOR:** \_\_\_\_\_

DATE	SKY CODE NO	WIND CODE NO	START TEMP °F	START TIME (24 hr)	END TIME (24 hr)	TOTAL BATS COUNTED	TECHNIQUE USED enter VISUAL or VIDEO

Other Surveyors:

Other  
COMMENTS:

SKY		WIND		
<b>CODE</b>	<b>DESCRIPTION</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>~Speed</b>
1	Clear-Clear to a few clouds	1	Calm-Leaves Still	0 MPH
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*Sky and wind codes of 1 – 3 are best. Code of 4 is marginal. Avoid surveying if code is higher than 4.*





# Delaware Division of Fish and Wildlife

## Individual Volunteer Application Form



Name: \_\_\_\_\_  
(Last) (First) (M.I.)

Address: \_\_\_\_\_  
(Street) (City) (State) (Zip)

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_

E-mail address: \_\_\_\_\_

**Return Completed Form to:**

DE Div. of Fish and Wildlife  
Delaware Bat Program  
4876 Hay Point Landing Rd.  
Smyrna, DE 19977

Will you be volunteering to fulfill a service requirement? ☐ Yes ☐ No

If so, for what group/organization? \_\_\_\_\_ Hours Required \_\_\_\_\_

★ **OBJECTIVE** for volunteering with Delaware Division of Fish and Wildlife: \_\_\_\_\_

★ **COMMITMENT** I am interested in:

- Bat Spotters Colony Monitoring: 2 or more evenings per summer
- Acoustic Transect: Once per month in May, June, July, and August (must have own laptop)

★ **CONSIDERATIONS** (please check all that apply and explain)

☐ Age ☐ Physical ☐ Health ☐ Mobility ☐ Other

Please explain: \_\_\_\_\_

★ **AVAILABILITY:** Please indicate the best day(s) and time(s) for you

- ☐ Mon ☐ Tues ☐ Wed ☐ Thurs ☐ Fri ☐ Sat ☐ Sun **OR**
- ☐ Any Weekday ☐ Any Weekend ☐ AM Only ☐ PM Only **OR**
- Specific Date(s): \_\_\_\_\_ Specific Time(s): \_\_\_\_\_

★ **EMERGENCY CONTACT INFORMATION:** (Individuals to be notified in case of emergency)

1. \_\_\_\_\_  
(Name) (Relationship) (Phone Number)

2. \_\_\_\_\_  
(Name) (Relationship) (Phone Number)

★ **VOLUNTEER STATUS:** Surveyor Type (circle what best describes you):

**Landowner** -You are surveying a roost on your own property.

**Volunteer** -You are surveying as a volunteer and have limited expertise in both bat identification and ecology.

**Student** -You are a student studying bats with a basic expertise in both bat identification and ecology.

**Researcher** -You are actively involved in bat research on an academic and/or professional level.

Are you **Rabies Vaccinated\*** - Yes / No

**Titer Level & Date:**

*\*(for volunteers who might come in contact with live bats during sampling for White Nose Syndrome.)*

*Comments/Experience:*

★ Have you ever been convicted of a felony or Class A Misdemeanor? ☐ Yes ☐ No

If yes, please explain: \_\_\_\_\_

The Department of Natural Resources and Environmental Control is committed to affirmative action, equal opportunity, and the diversity of its workforce.

INDIVIDUAL VOLUNTEER POLICY

*Please make certain you have read and agree to the following before signing.*

- Volunteers perform service without compensation and are not considered employees of the State of Delaware. The Division of Fish and Wildlife does not provide Worker's Compensation or any other insurance coverage for volunteers. As a volunteer I will not attempt work that is beyond my abilities or for which I have not been assigned, trained, or authorized. I further understand that photographs may be taken at events and I give my permission to the Division of Fish and Wildlife and the Department of Natural Resources and Environmental Control to utilize my photographs in future publications, promotional materials and exhibits.
- The Division of Fish and Wildlife (henceforth referred to as the Division) cannot guarantee volunteer placement. The Division will, however, make every effort to match volunteer applicants to volunteer opportunities based on the needs of the Division and the interests and abilities of the volunteer.
- The Division employs a screening process for all volunteers based on the nature of the volunteer work and involvement level of the participant. Volunteers working with children or vulnerable populations, money, vehicles, data and information management, in a supervisory capacity, or otherwise required by Division staff will be required to undergo a Background Investigation conducted by the Division as a part of the screening process.
- Acceptance as a volunteer is contingent upon successful completion at all levels of screening.
- The Division reserves the right to reject a candidate for any reason which the Division, in its sole judgment, determines may affect the best interests of the Division. The Division reserves the right to withhold the reason(s) for such refusal.
- The Division accepts the service of all volunteers with the understanding that such service is at the sole discretion of the Division. Volunteers agree that the Division and the Volunteer may at any time, for any reason, decide to terminate the volunteer's relationship with the Division. Notice of such a decision should be communicated as soon as possible to the volunteer's supervisor.

\_\_\_\_\_  
(Signature of Applicant)

\_\_\_\_\_  
(Date)

**REQUIRED IF UNDER 18 YEARS OF AGE:**

I certify that (name) \_\_\_\_\_, my son/daughter, is fully capable of participating as a volunteer without compensation and has my permission to be assigned and participate as a volunteer for the Division of Fish and Wildlife. I understand the risks involved with being a volunteer and acknowledge that neither the State of Delaware, nor the Department of Natural Resources and Environmental Control, nor the Division of Fish and Wildlife, nor any state employee, will assume financial liability for injury or illness that might occur while my child is volunteering for the Division of Fish and Wildlife.

\_\_\_\_\_  
(Age if under 18)

\_\_\_\_\_  
(Signature of Parent or Guardian)

\_\_\_\_\_  
(Date)



DE Division of Fish and Wildlife  
**INDIVIDUAL VOLUNTEER MONTHLY TIME SHEET REPORT**



Month: \_\_\_\_\_ Year: \_\_\_\_\_

For questions or comments regarding timesheets or projects, contact Erin Adams at 302-735-8669 or [erin.adams@state.de.us](mailto:erin.adams@state.de.us). Completed forms should be mailed to 4876 Hay Point Landing Rd., Smyrna DE 19977 or faxed to 302-653-3431.

<b>Name:</b>		<b>Phone:</b>	
<b>Address:</b>			
Date	Location	Activity	Hours
<b>Total</b>			

**Volunteer Status**

- ☐ True volunteer receiving no compensation.
- ☐ Compensated by federal grant or employer with federal funding source. Please identify federal grant or employer: \_\_\_\_\_
- ☐ Compensated by employer with a non-federal funding source. Please identify employer: \_\_\_\_\_

*I certify that the volunteer activities and the volunteer status indicated above are true and correct.*

Volunteer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**DE Division of Fish & Wildlife**

The volunteer activities and hours reported above are accepted as necessary and reasonable.

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**For Office Use Only**

Date Received: \_\_\_\_\_

# Group Volunteer Log-In



Event/Activity: \_\_\_\_\_

Location: \_\_\_\_\_

Date: \_\_\_\_\_ Code: \_\_\_\_\_

By signing below, I acknowledge and agree to the following:

- That I understand the risks involved in being a volunteer for the Division of Fish and Wildlife and that neither the State of Delaware, nor the Department of Natural Resources and Environmental Control, nor the Division of Fish and Wildlife, nor any state employee or contractor, will assume any financial liability for any injury or illness that I, or any family member or friend in attendance with me, might incur while performing voluntary service for the Division of Fish and Wildlife.
- Volunteers are not considered employees of the State of Delaware. The Division of Fish and Wildlife does not provide Worker's Compensation or any other insurance coverage for volunteers.
- I agree to provide service as a volunteer without compensation and to adhere to Division of Fish and Wildlife rules and procedures and will not attempt work that is beyond my abilities or for which I have not been assigned, trained, or authorized.
- I understand that photographs may be taken at this event/activity, and I give permission to the Division of Fish and Wildlife and the Department of Natural Resources and Environmental Control to utilize my photographs in future publications, promotional materials and exhibits.

Date	Name (please print)	Signature	Email Address	Time In	Time Out	Total

The Department of Natural Resources and Environmental Control is committed to affirmative action, equal opportunity, and the diversity of its workforce.

The volunteer hours reported above are confirmed to be accurate and true by DE Div. of Fish and Wildlife project supervisor: \_\_\_\_\_

Signature

Date

Project Leader Certification: \_\_\_\_\_

Signature

Date

Date Hours Entered: \_\_\_\_\_

Hours Entered By: \_\_\_\_\_